DOCUMENT RESUME

ED 360 475 CE 064 055

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TITLE Distance Education Research Priorities for Australia: A Study of the Opinions of Distance Educators and Practitioners.
PUB DATE Jul 93
NOTE 22p.; Paper presented at the Biennial Forum of the Australian and South Pacific External Studies Association (11th, Adelaide, Australia, July 21-23, 1993).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Access to Information; Adult Education; *Distance Education; *Educational Research; Foreign Countries; *Information Needs; Postsecondary Education; *Research Needs; *Research Problems; *Teacher Attitudes
IDENTIFIERS *Australia

ABSTRACT

A group of 56 randomly selected members of the International Council for Distance Education who were based in Australia were surveyed regarding their opinions on distance education research priorities for Australia. A five-page questionnaire was used to gather biographical details about respondents and opinions regarding available level of research information, areas of distance education needing priority research attention, and problems encountered in research in distance education. Of the 56 questionnaires mailed in Australia, 36 (64 percent) were returned. Seventeen respondents had taken distance education courses at some time. The following were rated as areas of distance education about which little research information is available: discipline-based context, cost-benefit analysis, relationship between open learning and distance education, industrial and business training context, and role of distance education in national development. Respondents believed that more research is needed on virtually every aspect of distance education. The following areas were mentioned as requiring priority research attention: instructional and communications technology, industrial and business training context, role of distance education in national development, student support services, evaluation, and equity and access. Time allocation, funding, and professional advice were the three most frequently mentioned research problems. (Contains 15 references.) (MN)

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Distance Education Research Priorities for Australia: A Study of the Opinions of Distance Educators and Practitioners

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A Paper Presented at the 11th Biennial Forum of the Australian and South Pacific External Studies Association, Held at the University of South Australia, Adelaide, 21-23 July 1993.

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Abstract

The advantages of undertaking research in distance education are numerous. They include those which impact on national development, educational practice, professional practice in distance education, policy and management, and the constant review of research needs and methodology.

Research in distance education has suffered from a number of problems which include lack of coordination and focus and the involvement of comparatively few researchers. Future development in distance education would require a coordinated effort in establishing research priorities in Australia to effectively drive distance education theory and practice. One of the criteria in setting research priorities should be that derived from experts and practitioners of distance education. This paper reports on the Australian data collated from an investigation carried out as part of a world-wide study of the opinions of distance educators and practitioners regarding: (1) the availability of research information; (2) the areas in which research efforts should be concentrated; and (3) the order of priority to be given to such research areas in distance education. Using a five-part questionnaire (with a Cronbach's Aplha reliability coefficient of .89), the results suggest the need for a concerted effort to embark on vigorous research in almost all areas of distance education. The distance educators and practitioners have also prioritised the areas of research and have ranked the difficulties they face doing research in distance education. The results are discussed and their implications for distance education practice and further research indicated.

Introduction

The inclusion of research in almost any endeavour that humans undertake underscores the significance attached to its utility value. Within education, research has impacted on knowledge about education and its practice. According to Borg and Gall, (1983) research should specifically influence directly or indirectly, the processes of teaching and learning . The Australian Research Council (ARC) acknowledges that in this country, Australian educational research has influenced:

- 'the provision of knowledge that leads to more successful educational practices;
- the development of better understanding of educational processes as they are experienced by participants; and
- the refinement and alteration of the questions which guide both research and policy development' (ARC, 1992: p. x).

Education is concerned primarily with human learning, irrespective of where, when and how the learning takes place. In distance education however, as opposed to the conventional face-to-face mode of education, teaching and learning occur in a situation in which most or all the teaching is conducted by a teacher separated in space and time from the learner. Keegan (1990) has listed six elements of distance education. They are: separation of teacher and learner; influence of an educational organisation; use of media to link teacher and learner to educational content; two way exchange of communication; learners as individuals rather than grouped; and education as an industrialised form. In distance education, the expected outcomes of learning are determined and dependent on efficient and effective design of materials to fit the peculiar characteristics and needs of the adult learner (Jegede, 1992). The teaching of course content must also be done using appropriately selected media to complement the print based materials. All these complex activities in the delivery of education at a distance aggregate to form enormous tasks which apparently leave very little room for distance educators and practitioners to think about the place of research let alone undertake research in distance education.

The information available indicates that research is only just beginning to be given some mention within national or regional frameworks. For example, the first time American leaders in distance education met to review and discuss research in distance education was in 1988 (Moore, 1988). Moore is of the opinion that this was probably the first time that such a group met for this purpose anywhere in the world. A similar symposium was held in Australia for the first time at Deakin University in 1989; a second symposium was held in 1991; the third is planned for November, 1993. In the Latin American region, a workshop was organised in 1990 to analyse the results of research carried out to diagnose the current situation of distance education in the Americas (Villarroel, 1992). With regard to Africa, the first Pan-African

meeting on distance education took place in Tanzania in 1990 under the auspices of UNESCO. In India the first comprehensive project in distance education was launched very recently by the Indira Gandhi National Open University (Singh, 1992). What all this indicates is the absence of much needed research activities in distance education all over the world.

Indeed, with regard to the volume of research in distance education in Australia, the entries in the Australian Education Index (AEI) indicate that the distance education literature output between 1980 to 1989 stood at only 2.0 per cent of the Australian literature (when Out-of-school Education, Adult Education and Continuing Community and mass Education are included).

Some have attributed the paucity of research in distance education to a number of reasons which include:

* the field of distance education being relatively young;
* distance education providers and practitioners often being overwhelmed by the sheer volume, complexity and variety of activities involved in the provision of education at a distance; and
* the tendency to regard research as ancillary to distance education (Coldeway, 1990).

The above reasons could in part be responsible for Coldeway's criticism of distance education research as not planned, conducted, and/or reported in a systematic manner. And yet the choice of learning and teaching strategies, instructional design, development, production and delivery of instructional materials using any form of communications technology or a multimedia approach would require that empirical evidence be generated to support their educational significance. This would seem to be an important argument to back the recommendation of ARC that 'the national educational research effort needs to be guided by a set of priorities to a greater extent than is presently the case' (p. 70). Given the myriad of issues attendant to the delivery of distance education, prioritising its research effort to maximise efforts and assuring effectiveness and concertedness would appear to be in order.

The second reason for the identification of priority areas for distance education research stems from the indication that if its escalating demand being currently witnessed is anything to go by, learning in non-formal settings is likely to be a substantial growth area in education in the foreseeable future. According to Evans (1992) distance education, as part of Australia's educational fabric, is being called upon to do more, and to do it more efficiently and more diversely than ever before. For this to be achieved satisfactorily, issues including those relating to instructional design of materials, technology, learning and teaching strategies, access and equity, and quality need to be addressed in a methodical and logical manner.

Another reason which is related to the above is that it is only by setting priority areas that the where and how of the concentration of research effort could be properly addressed. For instance the questions of funding, relevancy, timing, and policy formulation of research in distance education at both the national and institutional levels become much easier to deal with if priorities are identified.

It is important that as the issue of priority in research is being discussed in the wider educational circles, cognisance is taken of the need to pay particular attention to distance education. It is not uncommon that when policy decisions are being made, especially in educational matters, that either those most concerned are not contacted or the contacts are made at such a late stage that their opinions are given little consideration. As the future of distance education in Australia is currently being considered, it would be worthwhile to begin by obtaining the input of distance education experts and practitioners regarding the concentration and priority of research effort in their field. This, apart from ensuring that the position of one of the groups central to distance education is sought very early in the decision making process, encourages healthy and hopefully fruitful debate within the community of distance education experts and practitioners.
This study therefore investigated the opinions of the community of experts in distance education in Australia regarding:

(1) the availability of research information;
(2) the areas in which research efforts should be concentrated; and
(3) the order of priority to be given to such research areas in distance education.

Methodology

Sample

This paper reports on the data relating to samples from Australia within a large research study conducted in all the regions of the world.
All the distance educators and practitioners who are registered as individual members of the International Council for Distance Education formed the population of the study. Using the 1992 membership list, 200 members were randomly selected across the various regions of the world as a sample. Fifty-six of these distance educators and practitioners sampled were Australia based.

Instrumentation and Procedure of Administration

The instrument consisted of a five-page questionnaire divided into five sections. Section A related to biographical details while sections B, C and D sought opinions regarding level of research information, where research effort should be concentrated upon, and areas needing priority research attention respectively, within distance education. Section B sought responses to the 22 items contained in the section on a five-point Likert type scale of 'Adequate Information Available', 'Barely Adequate Information Available' 'Little Information Available' 'No Information Available', and 'Don't Know' scored as 5, 4, 3, 2, 1 respectively. Section C also sought responses to the 22 items contained in the section on a five-point Likert type scale of 'Commence Research', 'More Research Needed' 'Less Research Needed' 'No More Research Needed', and 'Don't Know' scored as 5, 4, 3, 2, 1 respectively. Section E required respondents to rank the 15 listed difficulties faced in research in distance education. The instrument underwent a series of validating procedures by a panel of judges selected from a cross section of experts in distance education, research methodology, communications and data analysis. The questionnaire was mailed to the subjects of the sample within a 3-day period accompanied by a letter requesting that they send the questionnaire back as soon as completed. The Cronbach's alpha reliability coefficient of the questionnaire was calculated to be .89.

Results and Findings

Of the 56 questionnaires mailed out in Australia, 36 were returned representing 64 percent response rate. The sample contained 17 females and 19 males. Seventeen respondents had at one time studied through distance education while 19 had not. Other demographic variables of the sample are summarised in Figures I & II.

The analysis of the frequencies of responses to the items in Section B of the questionnaire indicated that the majority of the experts and practitioners of distance education in the sample of the study are of the opinion that the level of information available from research in distance education is only just barely adequate or adequate (see Table 1). With specific reference to the experts on responses regarding the level of information available for the different broad groupings in distance education, five areas attracted 40 percent and above agreement as having little information available. They are discipline-based context (48.3%), cost benefit analysis (42.4%), relationship between open learning and distance education (41.9%),

industrial and business training context (40.6%), and role of distance education in national development (40.6%).

TABLE 1 ABOUT HERE

Table 2 contains the frequency tabulation of the opinions of experts and practitioners in the study sample regarding the areas in distance requiring concentration of research effort in Australia. The results as contained in the table indicate that the experts believe more research is needed in virtually all the areas. Worth noting are the areas which attracted 70% and above agreement among the experts as requiring concentration of research effort. These are: learner characteristics (70%), design and development of study materials (83.3%), instructional and communications technologies (84.4%), student support services (74.1%), development of students study skills (72.4%), systems for the provision of feedback to students (70%), and evaluation (77.4%).

TABLE 2 ABOUT HERE

The areas in distance education most frequently mentioned as requiring priority research attention in Australia by the study sample are: instructional and communications technology (59.4%), industrial and business training context (53.6%), role of distance education in national development (48.3%), student support services (46.7%), evaluation (46.9%), equity and access (45.2%), design and development of study materials (45.2%), and interactive multimedia (41.9%). Table 3 has the details of the frequency tabulation of the responses to all the items in Section C.

TABLE 3 ABOUT HERE

The results of the ranking of difficulties faced by distance education experts and practitioners undertaking research in Australia as opined by the sample of this study are as shown in Table 4. Time allocation, funding, and professional advice were the three greatest difficulties identified.

TABLE 4 ABOUT HERE

The comparisons of the results of the opinions of the experts and practitioners of distance education sampled on the basis of the moderator variables of gender, years of working experience in distance education, area of specialisation in distance education, present position at work, highest qualification obtained, source of research funding, whether they studied via the distance education mode, and if those who studied by the distance education mode were successful are shown in Tables 5, 6, & 7. When submitted to ANOVA only the variables of years of working experience in distance education, and if those who studied by the distance education mode who were successful yielded significant differences ($p < .05$) in opinions with regard to areas requiring priority attention in distance education research (see Table 7). The analysis was followed by Scheffe tests of *post hoc* contrasts of the means to detect where the significant differences lay. The pattern of differences did reveal that those who had over 20 years of working experience in distance education and those who were not successful as distance education students suggested more priority attention to the areas in distance education needing research.

TABLES 5, 6 & 7 ABOUT HERE

Discussion, conclusion and implications

This study as a part of a larger investigation examined the opinions of distance education experts and practitioners in Australia with regard to (1) the availability of research information, (2) areas in which research efforts should be concentrated, and (3) the order of priority to be given to such research areas in distance education. The results and findings of the study suggest that according to the experts, there is a severe shortage of research information and also that there is need to embark on a vigorous research effort in almost all areas. The experts have also prioritised the areas of research and have ranked time allocation, funding and professional advice as the three top difficulties they face doing research in distance education.

The issue of the non-availability of research information is hardly surprising as there is a logical relationship between conducting research and information available from research activities. As most of the experts have said, there is not much distance education research being carried out. It is therefore expected that there will be no available literature. This is in agreement with the situation as noted by Coldeway (1990) and supports the observation of the ARC (1992) that 'the education literature during the 1980s appeared to pay relatively little attention to education that occurs in non-formal settings' (p. 12).

Almost all the areas of broad groupings of research activities in distance education have been nominated by the experts as requiring concentration of research effort in Australia (see Table 2). If research data is scarce, it makes sense to suggest that all areas should be examined. Of particular interest is the fact that seven areas attracted over 70% agreement, as shown in Table 2. Moore (1988) and Jegede (1992) have argued the need to base all activities and practices within distance education on sound empirical base through research. The argument could be more strongly made considering the heavy reliance on education as an instrument for total national development (Sharma, 1986). The development of the human resources within a nation requires extreme caution to avoid errors which could result in unfortunate consequences. It therefore needs no stressing that all educational activities must begin from sound research information. Taylor (1989) has, with specific reference to South Asia, listed six areas in which research in distance education should focus on. They are:

- 'understanding the factors which affect the learning processes of students who are at a distance from the providing institution;
- demonstrating the efficacy of particular instructional strategies;
- demonstrating the cost-effectiveness of particular combinations of instructional media;
- evaluating the utility of different distance education techniques in formal and non-formal educational contexts;
- exploring the economic impact of distance education on national development; and
- contributing to the theoretical understanding of distance education'. (p. 87 & 88).

The different areas mentioned in this study by the experts in Australia as requiring concentration of research activities seem to agree in the main with what Taylor (1989) has recommended for South Asia. Indeed, as could be seen on Table 3, the six top broad groupings of research areas judged by the experts to require priority attention also fall broadly within the recommendations.

The distance education experts and practitioners sampled have ranked time allocation and funding as the two top difficulties they face. This seems to agree with the opinions of their counterparts in other parts of the world (Jegede, 1993). ARC (1992) has reported that, on

average, about 15 percent of education academics' time is allocated to research. Given that most distance educators and practitioners are heavily occupied with the overwhelming demands of design, development, delivery, and management of distance education, it will not be a surprise if the time allocated for research by distance eductors and practitioners is much lower than the ARC figure for education in general.

It does appear that most of the distance educators and practitioners who engage in research use funding other than direct government research grants. The results of this study indicated that the use of personal sources of funding is prevalent. According to ARC (1992), Australia spends only 0.35 per cent of its education expenditure on educational research, compared with 0.5 per cent in the United States of America. Education, which receives about two per cent, on average, of the annual ARC large grants (Bundy, 1990), is classified under Humanities and Social Sciences. There appears to be a general feeling in Australia that educational research receives an inadequate share of the ARC funds. Distance education receives only about 10 per cent of these funds. Detailed discussion of issues affecting fund allocation, eg, application for ARC grants and success rates, classification to reflect the scope of educational research and intra-institutional allocations of research funds are beyond the scope of this paper. Suffice it to state that even with funding for commissioned research and consultancies in distance education, research into the various areas of distance education is grossly under-funded.

As mentioned earlier, if the increasing demand for distance education as is currently being witnessed is an indication that learning in non-formal settings is likely to be a substantial growth areas in education in the foreseeable future, then there is every argument for making distance education a priority research area in Australia. There are those who might argue against priority setting in research due to the great variability among researchers, interests, diffuseness of effort and lack of consistent connection with professional practice (Hattie, 1990). However, this argument may not hold if it is considered that educational institutions, government agencies, departments, research organisations and individual researchers establish their own priorities to guide their research activities.

A number of issues are implicated from the results of this study. Firstly, it is obvious from the results of this research that very little has been accomplished by way of research in distance education and there is therefore a need to embark on research into all areas of distance education, The low level or near absence of research provides practitioners with neither valuable information nor an empirically rooted basis for actions considering the high level of demand for education at a distance. Second, more time and funds need to be committed to research in distance education than at present if Australia is to fully and effectively meet the demands for alternative delivery of education. According to Evans (1992) research has an

important but difficult place in the changes which surround distance education. The nature of research is that it requires time and resources to actualise. There is a need to give these factors some consideration in the bid to commit all resources and time to meeting the demands for distance education. Third, the need for distance education to be on the priority list of educational research in Australia and for the research within distance education to be prioritised cannot be overemphasised. As mentioned by Moore (1988), there is an academic need for review and analysis of research and for the organisation of a research agenda for distance education practitioners and providers all over the world. Fourth, for more comprehensive data on research in distance education and for a continual review of the place of research, an extension of this study with a more rigorous design with a large sample would be worthwhile . Embarking on such a study on a periodic basis would be beneficial for planning, management and delivery of distance education.

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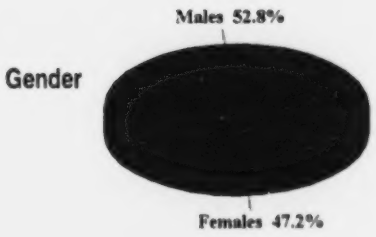
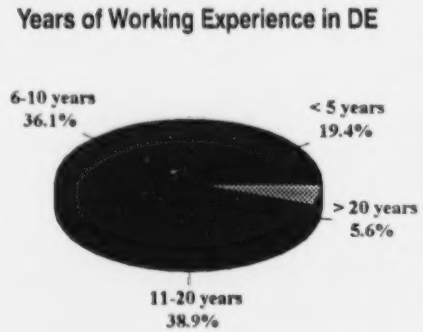
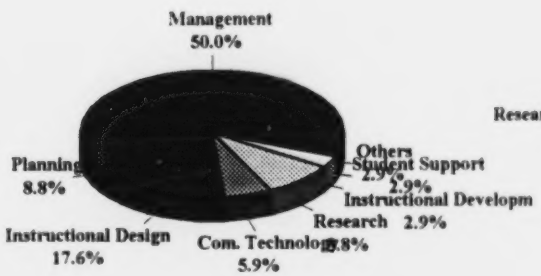
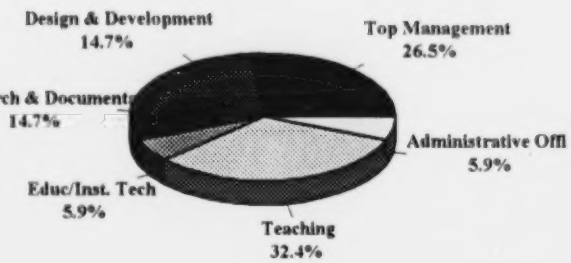
Demographic Variables of the Respondents - Figure I







Area of Specialisation in DE



Present Position at Work

Demographic Variables of Respondents - Figure II

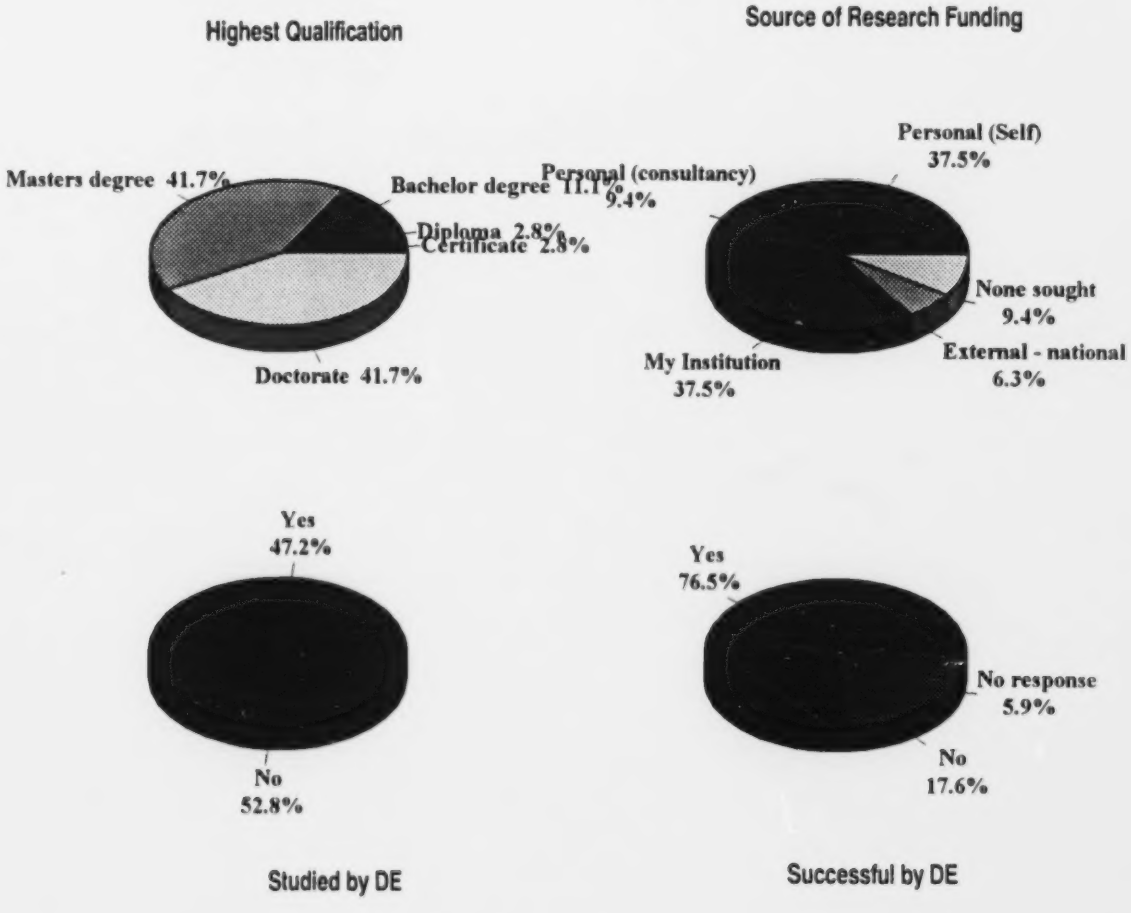


TABLE 1: Frequency tabulation of responses of experts in Australia regarding the level of information available for the different broad groupings in distance education.

	Broad Groupings of Research Areas	Adequate information available	Barely adequate information available	Little information available	No information available	Don't know
1.	**Theory and Philosophy**	15 (48.4)	10 (32.3)	6 (19.4)	0 (0.0)	0* (0.0)
2.	**Learner Characteristics**	13 (41.9)	8 (25.8)	8 (25.9)	0 (0.0)	2 (6.5)
3.	**Equity and Access (compensating for disadvantage)**	5 (16.1)	11 (35.5)	8 (25.8)	1 (3.2)	6 (14.4)
4.	**Design and development of study materials**	11 (34.4)	16 (50.0)	4 (12.5)	0 (0.0)	1 (3.1)
5.	**Instructional & Communications Technology**	14 (43.8)	12 (37.5)	5 (15.6)	0 (0.0)	1 (3.1)
6.	**Teleteaching and learning**	12 (17.5)	12 (37.5)	6 (18.8)	0 (0.0)	2 (6.3)
7.	**Management and Planning**	6 (18.2)	11 (33.3)	11 (33.3)	1 (3.0)	4 (12.1)
8.	**Student support services**	8 (25.0)	15 (41.7)	5 (13.9)	1 (3.1)	3 (9.4)
9.	**Development of students study skills**	8 (22.2)	14 (42.4)	7 (21.2)	1 (0.0)	3 (9.1)
10.	**Systems for the provision of feedback to students**	4 (12.5)	13 (40.6)	11 (34.4)	0 (0.0)	4 (12.5)
11.	**Interactive Multimedia**	8 (24.2)	14 (32.3)	9 (27.3)	0 (0.0)	2 (6.1)
12.	**Discipline based context**	0	8 (27.6)	14 (48.3)	1 (3.4)	6 (20.7)
13.	**Cognition and metacognition**	7 (10.0)	6 (21.0)	9 (30.0)	3 (10.0)	9 (30.0)
14.	**Cost benefit analysis**	3 (9.1)	11 (33.3)	14 (42.4)	2 (6.1)	3 (9.1)
15.	**Relationship between open learning and distance education**	5 (16.1)	9 (29.0)	14 (41.9)	0 (0.0)	4 (12.9)
16.	**Industrial and Business training context.**	1 (3.1)	12 (37.5)	13 (40.6)	0 (0.0)	6 (18.8)
17.	**Research Methodology**	13 (40.6)	7 (21.9)	11 (34.4)	0 (0.0)	1 (3.1)
18.	**Evaluation**	13 (40.6)	10 (31.3)	8 (25.0)	1 (3.1)	0 (0.0)
19.	**Expert Learning Systems**	4 (12.5)	8 (25.0)	9 (28.1)	4 (12.5)	7 (21.9)
20.	**Role of distance education in national development**	5 (15.6)	7 (21.9)	13 (40.6)	3 (9.4)	4 (12.5)
21.	**Teacher Education**	13 (41.9)	8 (25.8)	6 (19.4)	1 (3.2)	3 (9.7)
22.	**Professional development of distance education**	6 (18.8)	10 (31.3)	12 (37.5)	1 (3.1)	3 (9.4)

* $p < .05$

TABLE 2: Frequency tabulation of responses of experts in Australia regarding the areas in distance education requiring concentration of research effort.

	Broad Groupings of Research Areas	Commence Research	More Research needed	Less Research Needed	No more Research needed	Don't know
1.	Theory and Philosophy	0 (0.0)	18 (62.1)	8 (27.6)	2 (6.9)	1* (3.4)
2.	Learner Characteristics	1 (3.3)	2.1 (70.0)	8 (26.7)	0 (0.0)	0 (0.0)
3.	Equity and Access (compensating for disadvantage)	3 (10.0)	18 (60.4)	1 (3.3)	2 (6.7)	6 (20.0)
4.	Design and development of study materials	2 (6.7)	25 (83.3)	3 (10.0)	0 (0.0)	0 (0.0)
5.	Instructional & Communications Technology	2 (6.3)	27 (84.4)	1 (3.1)	2 (6.3)	0 (0.0)
6.	Teleteaching and learning	2 (6.5)	20 (64.5)	5 (16.1)	3 (9.7)	1 (3.2)
7.	Management and Planning	4 (14.3)	14 (50.0)	6 (21.4)	1 (3.6)	3 (10.7)
8.	Student support services	0 (0.0)	20 (74.1)	2 (7.4)	1 (3.7)	4 (14.8)
9.	Development of student study skills	4 (13.8)	21 (72.4)	2 (6.9)	2 (6.9)	0 (0.0)
10.	Systems for the provision of feedback to students	2 (6.7)	21 (70.0)	2 (6.7)	1 (3.3)	4 (13.3)
11.	Interactive Multimedia	5 (16.7)	20 (66.7)	1 (3.3)	3 (10.0)	1 (3.3)
12.	Discipline based context	3 (10.7)	16 (57.1)	3 (10.7)	1 (3.6)	5 (12.9)
13.	Cognition and metacognition	2 (6.9)	16 (55.2)	4 (13.8)	1 (3.4)	6 (20.7)
14.	Cost benefit analysis	5 (16.7)	18 (60.0)	3 (10.0)	4 (13.3)	0 (0.0)
15.	Relationship between open learning and distance education	1 (3.3)	20 (66.7)	2 (6.7)	3 (10.0)	4 (13.3)
16.	Industrial and Business training context	6 (18.8)	14 (59.4)	2 (6.3)	1 (3.1)	4 (12.5)
17.	Research methodology	2 (7.1)	17 (60.7)	5 (17.9)	3 (10.7)	1 (3.6)
18.	Evaluation	3 (9.7)	24 (77.4)	2 (6.5)	2 (6.5)	0 (0.0)
19.	Expert Learning Systems	2 (6.9)	16 (55.2)	3 (10.3)	2 (6.9)	6 (20.7)
20.	Role of distance education in national development	7 (22.6)	14 (45.2)	5 (16.1)	0 (0.0)	5 (16.1)
21.	Teacher Education	1 (3.6)	15 (53.6)	4 (14.3)	3 (10.7)	5 (12.9)
22.	Professional development of distance educators	5 (15.6)	20 (62.5)	3 (9.4)	1 (3.1)	3 (9.4)

* $p < .05$

TABLE 3: Frequency tabulation of responses of experts in Australia regarding the areas in distance education requiring priority research attention.

	Broad Groupings of Research Areas	High Priority	Medium Priority	Low Priority
1.	**Student support services**	14 (46.7)	14 (46.7)	1* (3.3)
2.	**Industrial and Business training context**	15 (53.6)	5 (17.9)	8 (28.6)
3.	**Equity and Access (compensating for disadvantage)**	14 (45.2)	13 (36.1)	4 (12.9)
4.	**Discipline based context**	4 (15.4)	16 (61.5)	6 (23.1)
5.	**Expert Learning Systems**	6 (21.4)	17 (60.7)	5 (17.9)
6.	**Professional development of distance educators**	12 (40.0)	12 (40.0)	6 (20.0)
7.	**Theory and Philosophy**	8 (28.6)	9 (32.1)	11 (39.3)
8.	**Development of student study skills**	11 (37.9)	15 (51.7)	3 (10.3)
9.	**Cognition and metacognition**	5 (18.5)	13 (48.1)	9 (33.3)
10.	**Role of distance education in national development**	14 (48.3)	8 (27.6)	7 (24.1)
11.	**Management and Planning**	12 (48.0)	12 (40.0)	6 (20.0)
12.	**Learner Characteristics**	9 (30.0)	17 (56.7)	4 (13.3)
13.	**Systems for the provision of feedback to students**	12 (38.7)	16 (51.6)	3 (4.7)
14.	**Cost benefit analysis**	11 (35.5)	14 (45.2)	6 (19.4)
15.	**Teacher Education**	8 (28.6)	10 (35.7)	10 (35.7)
16.	**Design and development of study materials**	14 (45.2)	16 (51.6)	1 (3.2)
17.	**Evaluation**	15 (46.9)	14 (43.8)	3 (9.4)
18.	**Instructional & Communications Technology**	19 (59.4)	9 (28.1)	4 (12.5)
19.	**Interactive Multimedia**	13 (41.9)	12 (38.7)	6 (19.4)
20.	**Relationship between open learning and distance education**	8 (27.6)	13 (44.8)	8 (27.6)
21.	**Teleteaching and learning**	10 (35.7)	13 (46.4)	5 (17.9)
22.	**Research methodology**	7 (22.6)	15 (48.6)	9 (29.0)

* $p < .05$

TABLE 4: Rank ordering of difficulties faced by experts in Australia with research in distance education.

	Difficulties with Research	Frequency	Rank Order
1.	**Competency in research methodology**	9	9
2.	**Access to relevant literature**	6	5
3.	**Funding**	11	2
4.	**Professional advice**	6	3
5.	**Finding the right audience**	6	7
6.	**Time Allocation**	12	1
7.	**Technical advice**	5	11
8.	**Lack of personal interest in research projects**	6	13
9.	**Finding a researchable problem**	4	14
10.	**Lack of my institution's interest in my research efforts**	5	6
11.	**Report writing**	4	11
12.	**Political interference**	6	14
13.	**Research project management**	5	4
14.	**Lack of personal enhancement from research**	5	10
15.	**Others (please state)**	4	15

TABLE 5: Summary of ANOVA of the responses of the experts regarding the level of information available by selected demographic variables

Variable	Sum of Squares	DF	F-ratio	Probability
Position	953.72	4	0.83	0.51
Work Experience	104.05	2	0.17	0.84
Area of Specialisation	1105.60	5	0.96	0.46
Highest Qualification	140.69	3	0.15	0.92
Source of Funding for Research	1393.30	4	1.38	0.28
Gender	603.85	1	2.31	0.14
Studied by DE	98.61	1	0.34	0.56
Successful as a DE student	756.90	1	2.13	0.18

* $p < .05$

TABLE 6: Summary of ANOVA of the responses of the experts regarding areas in distance education requring concentration of research effort by selected demographic variables.

Variable	Sum of Squares	DF	F-ratio	Probability
Position	403.18	4	0.63	0.64
Work Experience	207.87	3	0.44	0.72
Area of Specialisation	638.70	6	0.67	0.67
Highest Qualification	234.02	3	0.50	0.68
Source of Funding for Research	171.04	4	0.25	0.90
Gender	3.49	1	.02	0.88
Studied by DE	20.00	1	0.13	0.71
Successful as a DE student	301.04	1	3.02	0.13

* $p < .05$

TABLE 7: Summary of ANOVA of the responses of the experts regarding areas in distance education requring priority research attention by selected demographic variables.

Variable	Sum of Squares	DF	F-ratio	Probability
Position	188.38	5	0.92	0.49
Work Experience	390.25	3	3.11	0.04*
Area of Specialisation	487.70	7	1.50	0.23
Highest Qualification	127.32	4	0.55	0.70
Source of Funding for Research	54.19	4	0.20	0.93
Gender	4.84	1	0.08	0.77
Studied by DE	18.06	1	0.32	0.57
Successful as a DE student	294.85	1	6.11	0.03*

* $p < .05$